REMARKS

Claims 1 and 3-20 now stand in the application, new claims 16-20 having been added. Reconsideration of the application and allowance of all claims are respectfully requested in view of the above amendments and the following remarks.

Claims 1, 3 and 7-11 are rejected as unpatentable over Zheng et al (USP 5,745,477) in view of Ikeda (USP 6,072,775). Claims 4 and 5 are rejected as unpatentable over Zheng et al in view of Soumiya et al (USP 6,094,418). Claim 6 is rejected as unpatentable over Zheng et al in view of Soumiya et al, and in further view of Smith et al (USP 6,452,905). Claim 12 is rejected as unpatentable over Zheng et al in view of Ikeda, and further in view of Smith et al. All of these rejections are respectfully traversed.

A revisiting of the concept of the present invention is appropriate at this point. The Background section of the present application begins with a discussion of the Venken et al article, a copy of which was submitted in an IDS with the originally filed application. That article describes an ATM Passive Optical Network (APON) where an Optical Line Termination (OLT) sits between a core network and a plurality of network units (ONU). The paper describes the management of buffers within the ONU's, and then proposes a traffic regulator at the OLT which can be managed in such a way that the queues typically at the ONU's will now be shifted to a buffer at the OLT. So the concept of buffers and buffer management and transmission rate control are acknowledged as prior art.

The problem noted by the present inventors is that to the left of the OLT in Fig. 1 of the Venken paper, in the core network, there are elements which have buffering elements, and it is

possible that, despite all of the congestion control on the ATM network between the OLT and ONU's, the data passed from the OLT into the core network will be eventually dropped by the buffers of the core network elements, which means that there has been a lot of wasted bandwidth between the ONU's and OLT. See, e.g., paragraphs [0005] and [0006] of the substitute specification filed July 7, 2005.

The solution provided by the present invention is two-fold. One aspect of the invention is to control the input/output state of a buffer on the core network in accordance with conditions of network elements on the shared medium. A second aspect of the invention is the control of the buffer in accordance with the state of the network terminations.

All of the rejected independent claims have now been amended to clarify that the buffering element is connected to the line termination element over a core network which is different from the shared medium. This is supported in the Background discussion as well as in paragraphs [0027] and [0028] of the substitute specification.

This is in clear contrast to Zheng et al, in that the buffer in Zheng is not on the core network on the other side of a line termination element. Zheng et al is directed to an Available Bit Rate (ABR) system wherein congestion of the ATM network is detected and the cell transmission rates of the end systems onto the ATM network are controlled in accordance with detected ATM network congestion. This is no more relevant than the Venken et al article already acknowledged as prior art.

All of claims 1 and 3-12 and 20 share this distinguishing feature.

A further aspect of the invention is the control of the buffer itself in accordance with bandwidth related conditions of network elements but in a way that does not impact transmission

rates over the shared medium. Claims 16-19 are directed to this feature. They all require notifying of the buffering element to change the input/output rate of the buffering element in accordance with the condition of at least one of the network termination elements. Examples of the control of the buffer in response to the notification are given at the last seven lines of paragraph [0030] and the last three lines of paragraph [0032]. These are steps to better permit the buffer to handle what is sent to it, which is different from changing what is sent to it over the shared medium. The change in what is sent to the buffer is separately controlled by the Medium Access Controller in the line termination element in cooperation with the network terminations, but this is a separate control from the control of the buffer itself.

The examiner has referred to the memory 70 in Fig. 5 of Zheng et al as the claimed buffer, but the control of the memory 70 in Zheng is for purposes of controlling the rate at which data is read out of the buffer and transmitted over the ATM network, i.e., it is transmission rate control. It is not a control of the buffer that will not change the transmission rate over the shared medium.

The secondary references relied on by the examiner do not teach the features by which the claims distinguish over Zheng as discussed above. None of these references teach the control of the input/output of a buffer that is not on the medium whose bandwidth is being allocated but is instead on a core network on the other side of a line termination element. None of these references teaches sending a notification to a buffer that implements input/output control in accordance with a bandwidth-related condition of a network element but which does so in a way that does not impact transmission rates over the network.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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